

I Claim:

1. An apparatus for exercising an upper torso, comprising:
  - an upright member adapted for positioning on a horizontal surface;
  - a support assembly secured to the upright member;
  - an arcuate guide means mounted in an upper portion of the support assembly;
  - a pair of handhold means having axes of rotation spaced at a selected distance from each other, each handhold means comprising an upper end pivotally mounted and detachably repositionable with respect to the guide means; and
  - a means for adjusting resistance to movement of said handhold means when the distance between the axes of rotation is decreased by a user.
2. The apparatus of Claim 1, further comprising a user station located below the handhold means, and wherein said guide means extends from a location forward of the user station to a location behind the user station.
3. The apparatus of Claim 2, wherein axes of rotation of the handhold means are substantially co-axially disposed with corresponding glenohumeral joints of the user positioned in the user station, and wherein said axes of rotation are substantially perpendicular to axes of circumduction of the glenohumeral joints of the user.
4. The apparatus of Claim 1, wherein the axes of rotation of the handhold means are substantially perpendicular to an arc of circumduction of shoulder joints of the user.
5. The apparatus of Claim 1, wherein the axes of rotation of the handhold means are parallel to each other and are located in a plane, which contains axes of circumduction of shoulder joints of the user.

6. The apparatus of Claim 1, wherein said guide means comprises an arcuate plate carrying a means for securing upper ends of the handhold means to the guide means.
7. The apparatus of Claim 1, wherein said means for adjusting resistance comprises a weight means mounted in said upright member and a gear assembly operationally connected to the weight means and to the handhold means.
8. The apparatus of Claim 7, wherein said resistance means further comprises a distant pivot assembly operationally connected to the gear assembly, a proximal pivot assembly mounted on the arcuate plate and operationally connected to the distant pivot assembly and to the handhold means, said distant pivot assembly and said proximal pivot assembly being connected by an elongated extendable arm.
9. The apparatus of Claim 7, wherein said resistance means further comprises a flexible connecting member extending between the weight means and the gear assembly.
10. An apparatus for exercising one or more shoulder joints of a user, comprising:
  - an upright member adapted for positioning on a supporting surface;
  - an overhead support assembly secured to the upright member and extending from a front thereof;
  - an arcuate guide means mounted in said overhead support assembly;
  - a pair of handhold means having axes of rotation parallel to each other, each handhold means comprising an upper end pivotally mounted and detachably re-positionable at a plurality of selected locations along the length of the guide means; and
  - a means for adjusting resistance to movement of said handhold means when a distance between the axes of rotation is decreased by a user.

11. The apparatus of Claim 10, wherein the axes of rotation of the handhold means are substantially perpendicular to an arc of circumduction of the shoulder joints of the user when the user moves the handhold means irrespective of a relative position of the upper ends of the handhold means along the length of the guide means.
12. The apparatus of Claim 10, wherein the axes of rotation of the handhold means are located in a plane, which contains axes of circumduction of shoulder joints of the user irrespective of a relative position of the upper ends of the handhold means along the length of the guide means.
13. The apparatus of Claim 10, further comprising a user station located below the handhold means, and wherein said guide means has an apex of the arc, which is oriented substantially above the user station.
14. The apparatus of Claim 12, wherein axes of rotation of the handhold means are substantially co-axially disposed with corresponding shoulder joints of the user seated in the user station, and wherein said axes of rotation are substantially perpendicular to axes of circumduction of the shoulder joints of the user.
15. The apparatus of Claim 12, wherein the arcuate guide means extends from a location forward of the axes of rotation of the handhold means to a location behind the user station.
16. The apparatus of Claim 10, wherein said means for adjusting resistance comprises a weight means mounted in said upright member and a gear assembly operationally connected to the weight means and to the handhold means.
17. The apparatus of Claim 16, wherein said resistance means further comprises a distant pivot assembly operationally connected to the gear assembly, a proximal pivot assembly mounted on the arcuate plate adjacent the upper ends of the handhold means, said proximal pivot assembly being operationally connected to the distant pivot assembly by an elongated extendable arm.

18. The apparatus of Claim 16, wherein said resistance means further comprises a flexible connecting member extending between the weight means and the gear assembly.